

## Product datasheet for RC237736

### G protein alpha 12 (GNA12) (NM\_001293092) Human Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	G protein alpha 12 (GNA12) (NM_001293092) Human Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	GNA12
Synonyms:	gep; NNX3; RMP
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin
ORF Nucleotide Sequence:	>RC237736 representing NM_001293092 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGATCGCC**

ATGTCCGGGTGGTGCAGCCCTCAGCCGCTGCCTGCTGCCGGCCGAGGCCGGGGCCCGGAGCGCA  
GGCGGGCAGCGCGCGCGACGCGGAGCGCGAGGCCCGGAGGCGTAGCCGCGACATCGACGCGTGT  
GGCCCGGAGCGCGCGGTCCGGCGCTGGTGAAGATCCTGCTGCTGGGCGGGCGAGAGCGGCAAG  
TCCACGTTCTCAAGCAGATGCGCATCATCCACGCCGCGAGTTCGACCAGAAGGCGCTGCTGGAGTTC  
GCGACACCATCTTCGACAACATCCTCAAGGGCTCAAGGGTCTTGTGATGCACGAGATAAGCTTGGCAT  
TCCTTGGCAGTATTCTGAAAATGAGAAGCATGGGATGTTCTGATGGCCTTCGAGAAAGCGGGGCTG  
CCTGTGGAGCCGGCCACCTTCCAGCTGTACGTCCCGGCCCTGAGCGCACTCTGGAGGGATTCTGGCATCA  
GGGAGGCTTTCAGCCGGAGAAGCGAGTTTCAGCTGAATTAATTTCTAGTAAGCAAGATATCCTGCTGGC  
TAGGAAAGCCACCAAGGGAATTTGGGAGCATGACTTCGTTATTAAGAAGATCCCTTTAAGATGGTGGAT  
GTGGGCGGCCAGCGGTCCAGCGCCAGAAGTGGTCCAGTGTTCGACGGGATCACGTCCATCCTGTTCA  
TGGTCTCCTCCAGCGAGTACGACAGGTCCTCATGGAGGACAGGCGACCAACCGGCTGGTGGAGTCCAT  
GAACATCTTCGAGACCATCGTCAACAACAAGCTTCTTCAACGTCTCCATCATTCTTCTCAACAAG  
ATGGACCTCCTGGTGGAGAAGGTGAAGACCGTGAGCATCAAGAAGCACTTCCCGACTTCAGGGGCGACC  
CGCACAGGCTGGAGGACGTCCAGCGCTACCTGGTCCAGTGTTCGACAGGAAGAGACGGAACCGCAGCAA  
GCCACTTCCACCACTTACCACCGCCATCGACACCGAGAACGTCCGCTTCGTGTTCCATGCTGTGAAA  
GACACCATCTGCAGGAGAACCTGAAGGACATCATGCTGCAG

**ACGCGT**ACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAATGATATCCTGGATT  
ACAAGGATGACGACGATAAGGTTTAA



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**Protein Sequence:** >RC237736 representing NM\_001293092  
 Red=Cloning site Green=Tags(s)

MSGVVRTLNRCLLPAEAGGARERRRAGSGARDAEREARRRSRDIDALLARERRAVRRLVKILLGAGESGK  
 STFLKQMRIIHGREFDQKALLEFRDTIFDNILKGSRLVDARDKLGIPWQYSENEKHGMFLMAFENKAGL  
 PVEPATFQLYVPALSALWRDSGIREAFSRRSEFQLNYFSPKQDILLARKATKGIVHDFVIKKIPFKMVD  
 VGGORSQRQKWFQCFDGIITSILFMVSSSEYDQVLMEDRRTNRLVESMNIFFETIVNNKLFNVSIILFLNK  
 MDLLVEKVKTVSIKKHFPDFRGPDRLEDPVQRYLVQCFDRKRRNRSKPLFHHFTTAIDTENVRFVHAVK  
 DTILQENLKDIMLQ

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

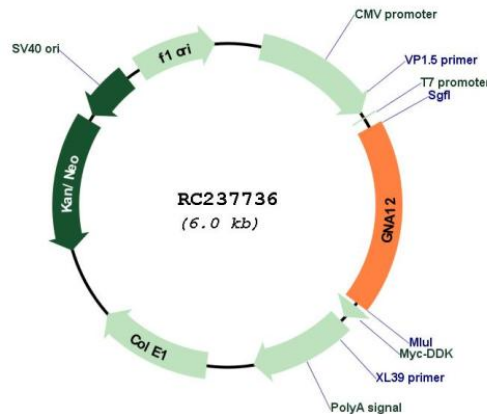
**Restriction Sites:**

SgfI-MluI

**Cloning Scheme:**



**Plasmid Map:**



**ACCN:** NM\_001293092

<b>ORF Size:</b>	1092 bp
<b>OTI Disclaimer:</b>	The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. <a href="#">More info</a>
<b>OTI Annotation:</b>	This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.
<b>Components:</b>	The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).
<b>Reconstitution Method:</b>	<ol style="list-style-type: none"><li>1. Centrifuge at 5,000xg for 5min.</li><li>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.</li><li>3. Close the tube and incubate for 10 minutes at room temperature.</li><li>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.</li><li>5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.</li></ol>
<b>RefSeq:</b>	<a href="#">NM_001293092.2</a>
<b>RefSeq Size:</b>	4347 bp
<b>RefSeq ORF:</b>	1095 bp
<b>Locus ID:</b>	2768
<b>UniProt ID:</b>	<a href="#">Q03113</a>
<b>Cytogenetics:</b>	7p22.3-p22.2
<b>Protein Families:</b>	Druggable Genome
<b>Protein Pathways:</b>	Long-term depression, MAPK signaling pathway, Regulation of actin cytoskeleton, Vascular smooth muscle contraction
<b>MW:</b>	42.8 kDa

**Gene Summary:**

Guanine nucleotide-binding proteins (G proteins) are involved as modulators or transducers in various transmembrane signaling systems (PubMed:22609986, PubMed:15525651, PubMed:15240885, PubMed:17565996, PubMed:12515866, PubMed:16787920, PubMed:16705036, PubMed:23762476, PubMed:27084452). Activates effector molecule RhoA by binding and activating RhoGEFs (ARHGEF12/LARG) (PubMed:15240885, PubMed:12515866, PubMed:16202387). GNA12-dependent Rho signaling subsequently regulates transcription factor AP-1 (activating protein-1) (By similarity). GNA12-dependent Rho signaling also regulates protein phosphatase 2A activation causing dephosphorylation of its target proteins (PubMed:15525651, PubMed:17565996). Promotes tumor cell invasion and metastasis by activating RhoA/ROCK signaling pathway and up-regulating proinflammatory cytokine production (PubMed:23762476, PubMed:16787920, PubMed:16705036, PubMed:27084452). Inhibits CDH1-mediated cell adhesion in process independent from Rho activation (PubMed:11976333, PubMed:16787920). Together with NAPA promotes CDH5 localization to plasma membrane (PubMed:15980433). May play a role in the control of cell migration through the TOR signaling cascade (PubMed:22609986).[UniProtKB/Swiss-Prot Function]